

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The paragraph beginning at page 8, line 4, has been amended as follows:

In the exemplary embodiment disclosed herein, the control signal values of each antenna element apply to all calls being served by a given sector [ar] at a given time. (Even though FIG. 1 shows one mobile subscriber unit being served by a base station, e.g. mobile subscriber unit 100 served by base station 103, a plurality of mobile subscriber units are typically served by a given sector.) In other words, control signal values are not determined for each specific call as may be the case for "smart antennas." The present invention utilizes measurements from all calls on a given sector over a study period and determines the resulting updated control signal values for the given sector. These updated control signal values are used until the control values are recalculated during a subsequent study period. With the present invention, measurements include accumulated peg counts determined by call processing (service measurements and call processing failures).

In the Claims:

Claims 6 and 16 have been canceled.

1. (Amended) A wireless communications system supporting a call with a mobile subscriber unit that is located within a sector of a cell of said wireless communications system, said sector containing a sub-sector, said wireless communications system containing a base station communicating with said mobile subscriber unit through a base station antenna for supporting said call, said wireless communications system comprising:
means for detecting an occurrence of a call event type associated with said call;
means, responsive to said detecting means, for determining an approximate location of said mobile subscriber unit at the occurrence of said call event type;

means, responsive to said determining means, for mapping said approximate location to said sub-sector of said sector;

means, responsive to said mapping means, for incrementing a corresponding event counter that is associated with said call event type and said sub-sector; [and] said corresponding event counter determining a performance metric associated with said sub-sector;

means, responsive to said incrementing means, for accumulating said corresponding event counter during a study period; and

means, responsive to said accumulating means, for adjusting a radiation pattern of said base station antenna by coupling control signals to said base station in order to provide an improvement of said performance metric.

7. (Amended) The wireless communications system of claim [6] 1 wherein a second performance metric is associated with a second sub-sector and wherein said adjusting means comprises:

means for calculating updated values of said control signals to provide said improvement of said performance metric;

means, responsive to said calculating means, for modifying said updated values in order to limit a degradation of said second performance metric; and

means, responsive to said modifying means, for adjusting said radiation pattern of said base station antenna with said updated values.

10. (Amended) The wireless communications system of claim [6] 1 wherein a second performance metric is associated with a second sub-sector and wherein said adjusting means comprises:

means for assessing whether said second performance metric is degraded more than a predetermined limit;

means, responsive to said assessing means, for calculating incremental values of said control signals to provide said improvement of said performance metric; and

means, responsive to said calculating means, for adjusting said radiation pattern of said base station antenna with said incremental values.

13. (Amended) The wireless communications system of claim [6] 1 wherein said base station antenna is a linear array antenna.

14. (Amended) The wireless communications system of claim [6] 1 wherein said base station antenna comprises a plurality of sub-sectors, each sub-sector associated with a narrow beam radiation pattern.

15. (Amended) A method for supporting a call for a mobile subscriber unit that is located within a sector of a cell of a wireless communications system, said sector containing a sub-sector, said wireless system containing a base station communicating with said mobile subscriber unit through a base station antenna for supporting said call, said method comprising the steps of:

detecting an occurrence of a call event type associated with said call;

determining an approximate location of said mobile subscriber unit at said occurrence of said call event type, responsive to said step of detecting;

mapping said approximate location to a sub-sector, responsive to said step of determining;

incrementing a corresponding event counter that is associated with said call event type and said sub-sector responsive to said step of mapping; [and] said corresponding event counter determining a performance metric associated with said sub-sector;

accumulating said corresponding event counter during a study period responsive to said step of incrementing; and

adjusting a radiation pattern of said base station antenna by coupling control signals to said base station antenna in order to provide an improvement of said performance metric, responsive to said step of accumulating.

17. (Amended) The method of claim [16] 15, wherein a second performance metric is associated with a second sub-sector and wherein said step of adjusting comprises:

calculating updated values of said control signals to provide said improvement of said performance metric;

modifying said updated values of said control signals in order to limit a degradation of said second performance metric, responsive to said step of calculating;
and

adjusting said radiation pattern of said base station antenna with said updated values, responsive to said step of modifying.

18. (Amended) The method of claim [16] 15, wherein a second performance metric is associated with a second sub-sector and wherein said step of adjusting comprises:

determining whether said second performance metric is degraded more than a predetermined limit;

calculating incremental values of said control signals to provide said improvement of said performance metric, responsive to said step of determining, and

adjusting said radiation pattern of said antenna with said incremental values, responsive to said step of calculating.